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### Test 1250: Massey-Ferguson 255 Diesel 12-Speed

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# NEBRASKA TRACTOR TEST 1250 — MASSEY FERGUSON 255 DIESEL 12 SPEED

## POWER TAKE-OFF PERFORMANCE

Power Hp (kW)	Crank shaft speed rpm	Fuel Consumption			Temperature °F (°C)			Barometer inch Hg (kPa)
		gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cooling medium	Air wet bulb	Air dry bulb	
MAXIMUM POWER AND FUEL CONSUMPTION								
Rated Engine Speed—Two Hours (PTO Speed—641 rpm)								
52.68 (39.28)	2000	3.310 (12.529)	0.438 (0.267)	15.92 (3.135)	190 (88.0)	64 (17.7)	75 (23.7)	29.080 (98.199)
Standard Power Take-off Speed (540 rpm)—One Hour								
48.37 (36.07)	1685	2.859 (10.822)	0.412 (0.251)	16.92 (3.333)	191 (88.5)	65 (18.3)	75 (24.0)	29.090 (98.233)
VARYING POWER AND FUEL CONSUMPTION—Two Hours								
46.29 (34.52)	2064	3.001 (11.359)	0.452 (0.275)	15.42 (3.039)	189 (87.2)	66 (18.9)	76 (24.7)	..... .....
0.00 (0.00)	2139	1.092 (4.134)	..... .....	..... .....	180 (82.2)	66 (18.9)	77 (25.0)	..... .....
23.48 (17.50)	2094	1.960 (7.421)	0.583 (0.354)	11.97 (2.359)	184 (84.2)	67 (19.4)	78 (25.8)	..... .....
52.64 (39.25)	2000	3.293 (12.466)	0.437 (0.266)	15.98 (3.149)	191 (88.3)	67 (19.4)	79 (26.1)	..... .....
11.96 (8.92)	2134	1.522 (5.761)	0.888 (0.540)	7.86 (1.549)	180 (82.5)	66 (19.2)	78 (25.8)	..... .....
35.08 (26.16)	2088	2.472 (9.358)	0.492 (0.299)	14.19 (2.796)	185 (85.0)	68 (19.7)	80 (26.7)	..... .....
Av 28.24 (21.06)	2087	2.223 (8.417)	0.549 (0.334)	12.70 (2.502)	185 (84.9)	67 (19.3)	78 (25.7)	29.093 (98.244)

## DRAWBAR PERFORMANCE

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption			Temp. °F (°C)			Barom. inches Hg (kPa)
					gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Cool- ing med	Air wet bulb	Air dry bulb	
Maximum Available Power—Two Hours 7th (1H L) Gear											
43.49 (32.43)	3115 (13.86)	5.24 (8.42)	1998	7.50	3.260 (12.341)	0.523 (0.318)	13.34 (2.628)	188 (86.4)	67 (19.2)	79 (26.1)	28.975 (97.844)
75% of Pull at Maximum Power—Ten Hours 7th (1H L) Gear											
35.10 (26.17)	2382 (10.59)	5.53 (8.89)	2064	5.39	2.737 (10.361)	0.544 (0.331)	12.82 (2.526)	184 (84.2)	72 (22.1)	78 (23.6)	28.784 (97.199)
50% of Pull at Maximum Power—Two Hours 7th (1H L) Gear											
24.71 (18.42)	1621 (7.21)	5.72 (9.20)	2101	3.91	2.239 (8.476)	0.632 (0.385)	11.03 (2.174)	183 (83.9)	76 (24.2)	86 (29.7)	28.795 (97.236)
50% of Pull at Reduced Engine Speed—Two Hours 9th (2H L) Gear											
24.55 (18.31)	1610 (7.16)	5.72 (9.20)	1432	3.78	1.756 (6.645)	0.499 (0.304)	13.99 (2.755)	183 (83.6)	76 (24.4)	86 (30.0)	28.755 (97.101)

## MAXIMUM POWER IN SELECTED GEARS

35.59 (26.54)	5591 (24.87)	2.39 (3.84)	2066	14.93	4th (2L H) Gear		180 (81.9)	60 (15.6)	65 (18.3)	29.050 (98.097)
41.79 (31.16)	4723 (21.01)	3.32 (5.34)	2001	12.90	5th (3L L) Gear		188 (86.7)	66 (18.9)	80 (26.7)	29.000 (97.929)
43.14 (32.17)	3546 (15.77)	4.56 (7.34)	2000	8.37	6th (3L H) Gear		189 (86.9)	66 (18.9)	79 (26.1)	29.010 (97.962)
44.36 (33.08)	3175 (14.12)	5.24 (8.43)	2000	7.38	7th (1H L) Gear		188 (86.7)	66 (18.9)	79 (26.1)	29.030 (98.030)
42.99 (32.06)	2301 (10.23)	7.01 (11.28)	2000	5.34	8th (1H H) Gear		180 (81.9)	66 (18.9)	80 (26.7)	28.980 (97.861)
44.75 (33.37)	2126 (9.46)	7.89 (12.70)	1999	4.97	9th (2H L) Gear		187 (86.1)	66 (18.9)	80 (26.7)	28.980 (97.861)

## LUGGING ABILITY IN RATED GEAR 7th (1H L)

Crankshaft Speed rpm	2000	1805	1602	1401	1196	995
Pull—lbs (kN)	3175 (14.12)	3385 (15.06)	3567 (15.87)	3723 (16.56)	3843 (17.10)	3617 (16.09)
Increase in Pull %	0	7	12	17	21	14
Power—Hp (kW)	44.36 (33.08)	42.45 (31.66)	39.49 (29.45)	35.85 (26.73)	31.46 (23.46)	24.79 (18.48)
Speed—Mph (km/h)	5.24 (8.43)	4.70 (7.57)	4.15 (6.68)	3.61 (5.81)	3.07 (4.94)	2.57 (4.14)
Slip %	7.38	7.96	8.42	8.99	9.44	8.88

Department of Agricultural Engineering

Dates of Test: August 23 to September 1, 1977

Manufacturer: Massey-Ferguson Inc., 1901 Bell Avenue, Des Moines, IA 50315

**FUEL, OIL AND TIME:** Fuel No. 2 Diesel Cetane No. 50.8 (rating taken from oil company's typical inspection data) **Specific gravity converted to 60°/60° (15°/15°)** 0.8381 **Fuel weight** 6.978 lbs/gal (0.838 kg/l) **Oil** SAE 20-20W **API service classification** MS/DS MM,DG,DM **To motor** 2.392 gal (9.055 l) **Drained from motor** 1.358 gal (5.141 l) **Transmission and final drive lubricant** Massey-Ferguson M-1127 **Total time engine was operated** 46.5 hours

**ENGINE** Make Perkins Diesel **Type** 4 cylinder vertical **Serial No.** 45CT44132 **Crankshaft** lengthwise **Rated rpm** 2000 **Bore and stroke** 3.875" × 5" (98.4 mm × 127.0 mm) **Compression ratio** 16 to 1 **Displacement** 236 cu in (3865 ml) **Cranking system** 12 volt **Lubrication** pressure **Air cleaner** paper primary and felt safety elements **Oil filter** full flow paper spin-on cartridge **Oil cooler** radiator for transmission and hydraulic oil **Fuel filter** paper element **Muffler** vertical **Cooling medium temperature control** thermostat

**CHASSIS:** **Type** standard **Serial No.** 9A265503 **Tread width** rear 56" (1422 mm) to 90" (2286 mm) front 48" (1219 mm) to 80" (2032 mm) **Wheel base** 82" (2083 mm) **Center of gravity** (without operator or ballast, with minimum tread, with fuel tank filled and tractor serviced for operation) Horizontal distance forward from center-line of rear wheels 26.2" (666 mm) Vertical distance above roadway 32.4" (823 mm) Horizontal distance from center of rear wheel tread 0.06" (2 mm) to the left **Hydraulic control system** constant running except when PTO clutch is disengaged **Transmission** selective gear fixed ratio transmission with partial (2) range operator controlled power shift **Advertised speeds mph (km/h)** first 1.4 (2.2) second 1.8 (2.9) third 2.0 (3.2) fourth 2.6 (4.2) fifth 3.6 (6.0) sixth 4.8 (7.8) seventh 5.4 (8.8) eighth 7.0 (11.6) ninth 7.9 (13.0) tenth 10.4 (17.0) eleventh 14.5 (23.8) twelfth 19.0 (31.1) reverse 1.8 (3.0), 2.4 (3.9), 7.4 (12.1), 9.6 (15.7) **Clutch** single plate dry disc operated by foot pedal **Brakes** double dry disc operated by two foot pedals which can be locked together **Steering** hydrostatic **Turning radius** (on concrete surface with brake applied) right 116.5" (2.96 m) left 118" (3.00 m) (on concrete surface without brake) right 128" (3.25 m) left 125.5" (3.19 m) **Turning space diameter** (on concrete surface with brake applied) right 241" (6.12 m) left 234" (5.94 m) (on concrete surface without brake) right 263" (6.68 m) left 260" (6.60 m) **Power take-off** 540 rpm at 1685 rpm.

**REPAIRS and ADJUSTMENTS:** Throttle level friction disc was tightened during drawbar tests.

**REMARKS:** All test results were determined from observed data obtained in accordance with

<b>TRACTOR SOUND LEVEL WITH CAB</b>	<b>dB(A)</b>
Maximum Available Power—Two Hours	96.0
75% of Pull at Maximum Power—Ten Hours	96.0
50% of Pull at Maximum Power—Two Hours	94.5
50% of Pull at Reduced Engine Speed—Two Hours	92.0
Bystander in 11th (3H L) gear	88.0

<b>TIRES, BALLAST AND WEIGHT</b>		<b>With Ballast</b>	<b>Without Ballast</b>
<b>Rear Tires</b>	—No., size, ply & psi (kPa)	Two 16.9-28; 6; 16 (110)	Two 16.9-28; 6; 16 (110)
<b>Ballast</b>	—Liquid (each)	300 lb (136 kg)	None
	—Cast Iron (each)	50 lb (23 kg)	None
<b>Front Tires</b>	—No., size, ply & psi (kPa)	Two 7.5L-15; 6; 32 (220)	Two 7.5L-15; 6; 32 (220)
<b>Ballast</b>	—Liquid (each)	None	None
	—Cast Iron (each)	100 lb (45 kg)	None
<b>Height of Drawbar</b>		23 in (580 mm)	23 in (580 mm)
<b>Static weight with operator—</b>	rear	5080 lb (2304 kg)	4385 lb (1989 kg)
	front	2230 lb (1012 kg)	2030 lb (921 kg)
	total	7310 lb (3316 kg)	6415 lb (2910 kg)

SAE and ASAE test code or official Nebraska test procedure. Temperature at injection pump return was 153°F (67.1°C). Six gears were chosen between 15% slip and 15 mph (24.1 km/h).

We, the undersigned, certify that this is a true and correct report of official Tractor Test **1250**.

LOUIS I. LEVITICUS  
Engineer-in Charge

G. W. STEINBRUEGGE, Chairman  
W. E. SPLINTER  
K. VON BARGEN  
Board of Tractor Test Engineers



**Massey Ferguson 255 Diesel**